

## Alpha Fetoprotein (AFP)

<b>Description</b>	70 kDa glycoprotein, foetal homologue of albumin
<b>Indication</b>	<ul style="list-style-type: none"> <li>• Screening for hepatocellular carcinoma in high risk groups (haemochromatosis, alcoholic cirrhosis if abstinent, hepatitis C cirrhosis, chronic active hepatitis/cirrhosis in hepatitis B surface antigen carriers, primary biliary cirrhosis in males, hepatic lesion on imaging)</li> <li>• Monitoring of established hepatic carcinoma</li> <li>• Diagnosis of hepatoblastoma</li> <li>• Diagnosis and monitoring of germ cell tumours</li> </ul> <p>AFP should NOT be used to screen for liver metastases.</p>
<b>Additional Info</b>	Small hepatocellular tumours can be detected by ultrasound. Undetectable lesions are likely to grow to 2 cm diameter within 4-12 months, so the suggested surveillance interval in cirrhosis is 6 months, using AFP and ultrasound.
<b>Concurrent Tests</b>	Hepatocellular carcinoma: LFTs Non-seminomatous germ cell tumours: HCG, LDH
<b>Dietary Requirements</b>	N/A
<b>Interpretation</b>	<p>Serum AFP is &lt;10 µg/L in healthy adults. AFP &gt;1000 µg/L suggests malignancy, although a persistent rise is more significant than the absolute level. Stable or decreasing AFP makes malignancy less likely. Patients with AFP &gt;50 µg/L should be referred for specialist hepatobiliary interpretation.</p> <p><u>Malignancies with raised AFP:</u></p> <ul style="list-style-type: none"> <li>• Hepatocellular carcinoma (400-500 µg/L is generally accepted cut-off to distinguish from chronic liver disease, 70-90% of cases have levels 1,000-100,000 µg/L, 40% of small tumours are AFP negative)</li> <li>• Non-seminomatous germ cell tumours of testis, ovary and other sites (40-60% of testicular germ cell tumours). Rarely elevated in stage one testicular cancer)</li> <li>• Hepatoblastoma (children, extremely rare in adults)</li> <li>• Liver metastases</li> <li>• Other malignancies</li> </ul> <p><u>Physiological causes for raised AFP:</u></p> <ul style="list-style-type: none"> <li>• Babies (2 g/L at 14 weeks gestation, 70 mg/L at term, declining to adult levels by one year of age)</li> <li>• Pregnancy (&gt;1000 µg/L, varies with gestation)</li> </ul> <p><u>Benign causes of raised AFP:</u></p> <ul style="list-style-type: none"> <li>• Hepatitis (raised in 20-40%, 95% of which &lt;200 µg/L)</li> <li>• Cirrhosis (raised in 20-40%, 95% of which &lt;200 µg/L)</li> <li>• Biliary tract obstruction</li> <li>• Alcoholic liver disease</li> </ul>

	<ul style="list-style-type: none"> <li>• Ataxia telangiectasia</li> </ul>
<b>Collection Conditions</b>	No restrictions
<b>Frequency of testing</b>	Cirrhosis: every 6 months Hepatocellular carcinoma: as required Non-seminomatous germ cell tumours: as required